

oxygen-network to the surface of said reactive particles, the reactive function  $R_1$  being contained in an amount up to 98 wt.% of said reactive particles and the non-reactive and/or partially reactive functions  $R_2$  and  $R_3$  being contained in an amount from 0-97 wt.% of said reactive particles;

wherein  $R_1$  comprises radicals selected from the group consisting of metal acid esters, NCO, urethane groups, epoxide groups, epoxy, carboxylic acid anhydride, C=C double bond systems, OH, alcohols bound by way of oxygen, alcohols bound by way of esters, alcohols bound by way of ethers, chelating agents, COOH,  $NH_2$ ,  $NHR_4$ , and reactive resin components;

wherein  $R_2$  comprises radicals selected from the group consisting of aromatic compounds, aliphatic compounds, fatty acid derivatives, esters, and ethers;

wherein  $R_3$  comprises resin radicals;

wherein  $R_4$  comprises radicals selected from the group consisting of acrylate, phenol, melamine, polyurethane, polyester, polyester imide, polysulfide, epoxide, polyamide, polyvinyl formal resins, aromatic compounds, aliphatic compounds, esters, ethers, alcoholates, fats, and chelating agents.

14. A coating composition according to claim 13, wherein the reactive function  $R_1$  comprises radicals selected from the group consisting of  $OTi(OR_4)_3$ ,  $OZr(OR_4)_3$ , acetyl acetate, 2-hydroxyethanolate, diethylene glycolate.
15. A coating composition according to claim 13, wherein  $R_3$  comprises radicals selected from the group consisting of polyester imides and THEIC polyester imides.
16. A coating composition according to claim 13, wherein  $R_4$  comprises radicals selected from the group consisting of acrylate resins, aminotriethanolate, acetyl acetate, polyurethane resins, and butyl diglycolate.

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17. A coating composition according to claim 13, wherein the reactive particles of component (A) have a network of elements selected from the group consisting of titanium, aluminum, silicon, and zirconium bound to the oxygen of the element-oxygen network of said reactive particles.
18. A coating composition according to claim 13, wherein the reactive particles of component (A) have an average radius of 2-80 nm.
19. A coating composition according to claim 13, wherein the reactive particles of component (A) are monomeric or polymeric element-organic compounds selected from the group consisting of orthotitanic acid ester, orthozirconic acid ester, titanium tetralactate, hafnium tetrabutoxide, tetraethyl silicate and silicone resins.
20. A process for coating a metal conductor comprising the steps of applying the coating composition according to claim 13 and curing said coating composition.
21. A process according to claim 20, wherein the metal conductor is an electrically conductive wire.
22. A process according to claim 21, wherein the electrically conductive wire is pre-coated.
23. A process according to claim 20, wherein the coating composition is applied as a single-layer.
24. A process according to claim 20, wherein the coating composition is applied as a base coat, middle coat, and/or top coat.
25. A substrate coated with the composition according to claim 13.
26. The substrate according to claim 25, wherein said substrate is an electrical conductor.